



# The Repacking Challenge: Designing a Successful Transition

*Information contained in this presentation is based on the “Broadcast Spectrum Repacking Timeline, Resource and Cost Analysis Study” prepared by Digital Tech Consulting, Inc.*

“No station will be allowed to operate on a channel that has been reassigned or repurposed more than 39 months after the repacking process becomes effective.”

- FCC Incentive Auction Order

# Background

- DTC Study is the only analysis in the record examining the time and effort required to complete a nationwide repack
- FCC has not analyzed this question
  - Widelity Report (December 2013) released prior to establishment of 39-month deadline
  - Widelity Report also includes no estimate of total number of stations to be repacked
  - June 2014 repacking simulations suggest far more stations will be repacked than previously thought
- No other stakeholder has analyzed this issue

# Facts on the Ground

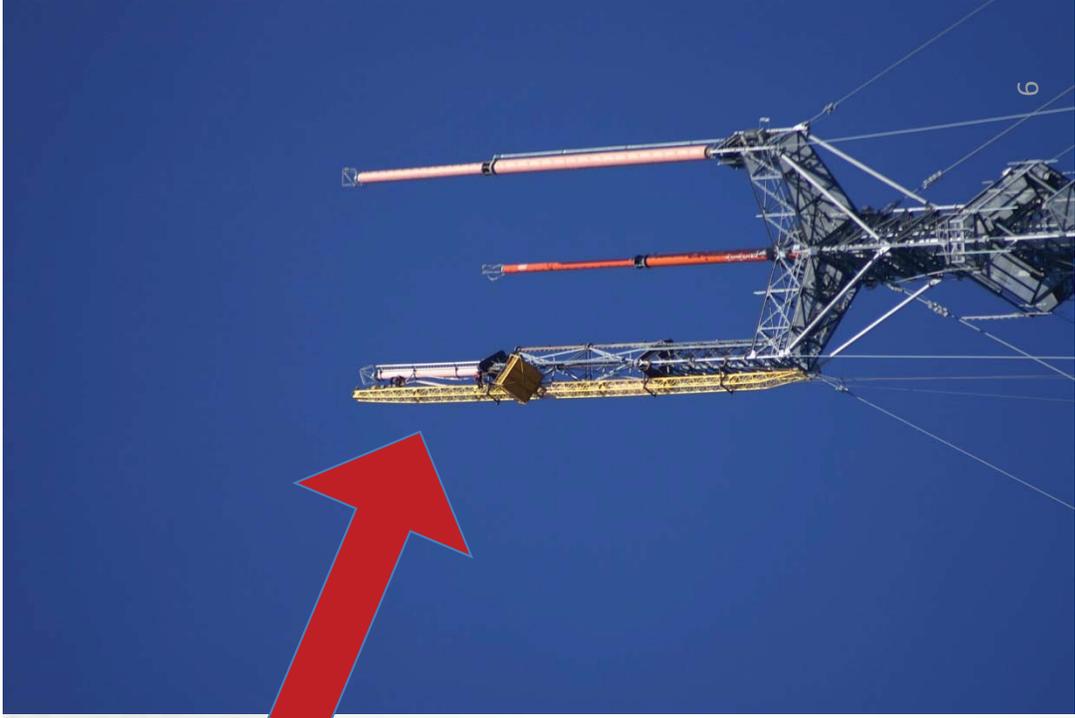
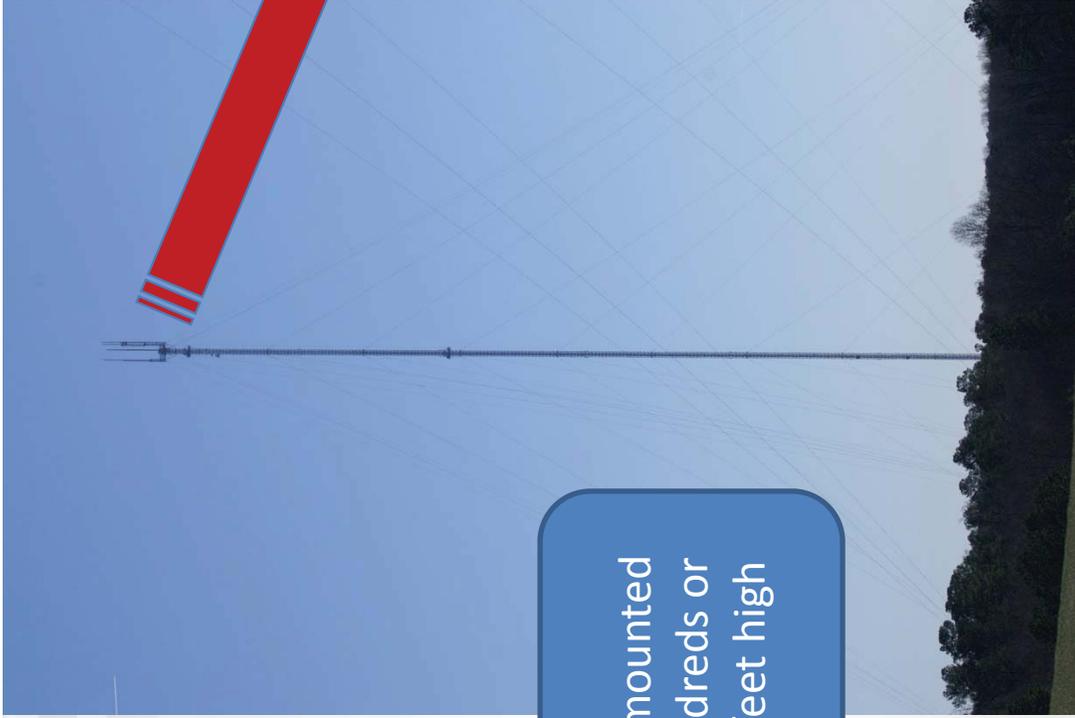
- Until the auction is completed, it is unknown how many stations will actually need to move to new channels – or which stations
- Current broadcast supply chain is significantly diminished since 2009 completion of DTV transition and Analog Shut Off
  - Limited high power antenna and transmitter manufacturing capacity
  - Limited number of tall tower crews and structural consultants
  - Modifications to towers may require many towers to meet new requirements
- DTC accounted for a ramp up in capacity in developing estimates of time required for repacking



# Avoiding Magical Thinking

- Will new vendors and resources appear during repack?
- Broadcasters hope so – seek smoothest transition possible
- Safety and reliability are primary considerations
- Resources are limited, and vendors are not fungible
- For example, tower crews operating on tall broadcast towers are not interchangeable with tower crews operating on lower wireless sites with much lighter antennas

Antennas are mounted on towers hundreds or thousands of feet high



Antennas weigh 2-12 tons



# Resources

Resource	Pre ASO	Now	Comments
Transmitter suppliers	6	3	Significant consolidation after ASO
Antenna suppliers	2	2	Production capacity for pylon antennas greatly diminished due to workforce reductions since ASO
RF Consulting Engineers	49	35	Qualified engineers specializing in high-power TV broadcasting work
Structural Engineer Firms	7	7	Firms that specialize in tall-tower work. Unlikely to be more available for repack work
<b>Qualified Tower Crews</b>	<b>30</b>	<b>13</b>	<b>Single biggest challenge – do not anticipate more than 16 qualified crews in time for repack</b>

Source: Digital Tech Consulting, Inc.

# Progress in 39 Months

Time in Years	1	2	3	3.25 (39 months)
Estimated range of stations that can complete move to new channel	65-97	169-252	273-409	297-445

## Other Factors

- Weather Events
- Special Urban Considerations
- Public Lands
- Zoning
- Time estimates assume only normal circumstances



# The Daisy Chain Challenge

- In many markets, some stations will be unable to move until other stations in the same market have moved
- Some stations will also be blocked by stations in adjacent markets
- Because of these daisy chain effects, this will be the most complex transition the FCC has ever administered
- Until final channel assignments are announced, unclear how long and complex these daisy chains will be

## Risks

- Attempting to complete the repack using unqualified vendors adds unnecessary risk
- A one-size-fits-all deadline is not conducive to an organized transition
  - A coordinated approach is critical
  - But the FCC's current rules will lead to an uncoordinated, disorganized scramble across the country



## A Way Forward

- Commission works with broadcasters and wireless carriers to develop a transition plan
- Media Bureau finalizes plan once forward auction complete
  - Ambitious, achievable deadlines for individual stations
  - Focus on clearing most desirable spectrum markets first
- Stations only forced off air if willfully fail to comply with achievable deadlines